HEALTHY COMMUNITIES DATA AND INDICATORS PROJECT

Short title: Walkable Distance to Public Transit
Full Title: Percent of population residing within ½ mile of regional bus/rail/ferry and within ¼ mile of bus/light rail

1. **Healthy Community Framework:** Meets basic needs of all

2. **What is our aspirational goal:** Safe, sustainable, accessible and affordable transportation options

3. **Why is this important to health?**

   Significance and health connection

   A strong and sustainable transportation system supports safe, reliable, and affordable transportation opportunities for walking, bicycling, and public transit, and helps reduce health inequities by providing more opportunities for access to healthy food, jobs, health care, education, and other essential services. Active and public transportation are extremely important to public health by helping individuals increase their levels of physical activity, thus reducing the risk of heart disease and obesity, improving mental health, and lowering blood pressure. Further, the transition from automobile-focused transport to public and active transport results in environmental health benefits, including reductions in air pollution, greenhouse gases and noise pollution, and leads to greater overall safety in transportation. Compared to public transit, a higher portion of trips by automobiles leads to a higher rate of traffic accidents and increased air pollution, which in turn lead to increased rates of respiratory diseases and illnesses and heart disease.

   Summary of evidence

   Individuals who live close to transit are more likely to be transit users and drive their cars less than people residing far from transit. Increased access to active and public transit is associated with increases in physical activity, which reduces risks of chronic disease and obesity.

   References
   1. Ewing R, Cervero R. Travel and the built environment: A meta-analysis. JAPA 2010;76(3):265-294.
   2. Frank LD, Andresen M, Schmid T. Obesity relationships with community design, physical activity, and time spent in cars. Am J Prev Med 2004;27:87-96.
   3. Besser LM, Dannenberg AL. Walking to public transit: Steps to help meet physical activity recommendations. Am J Prev Med 2005;29(4):273-280.
   4. Centers for Disease Control and Prevention. CDC Recommendations for Improving Health Through Transportation Policy: National Center for Environmental Health; 2008.

4. **What is the indicator?**

   Detailed definition: Percent of population residing within ½ mile of regional bus/rail/ferry and within ¼ mile of bus/light rail
   - Stratification: Race/Ethnicity (8 U.S. Census groups)

Data Description
- Data Sources: 2011 Transit Stops from the Metropolitan Transportation Commission (http://www.mtc.ca.gov/) , 2010 block-level population data by race and ethnicity from the U.S. Census Bureau (provided by California State Data Center at the California Department of Finance)
- Years available: 2010 (Census 100% population data)
- Updated: decennially
- Geographies available: census tracts, cities/towns, counties, and regional for 9-county Bay Area

Bay Area local and regional transit stops (updated June, 2011) were obtained from the Metropolitan Transportation Commission. Transit stops were classified as local or regional based on the transit agency affiliated with each stop. Half mile buffers were created around regional stops and quarter mile buffers were created around local stops. Regional and local buffers were intersected to determine transit access areas covered by both. Census blocks with centroids inside the transit access area were selected. 2010 block-level Census redistricting data (100% count by race/ethnicity) was merged with blocks inside the transit access area. Block data were aggregated by census tract, city/town, county, and region. For each geography level and race/ethnicity strata, rates of transit access were calculated. Standard errors, relative standard errors, and 95% upper and lower confidence intervals were calculated.
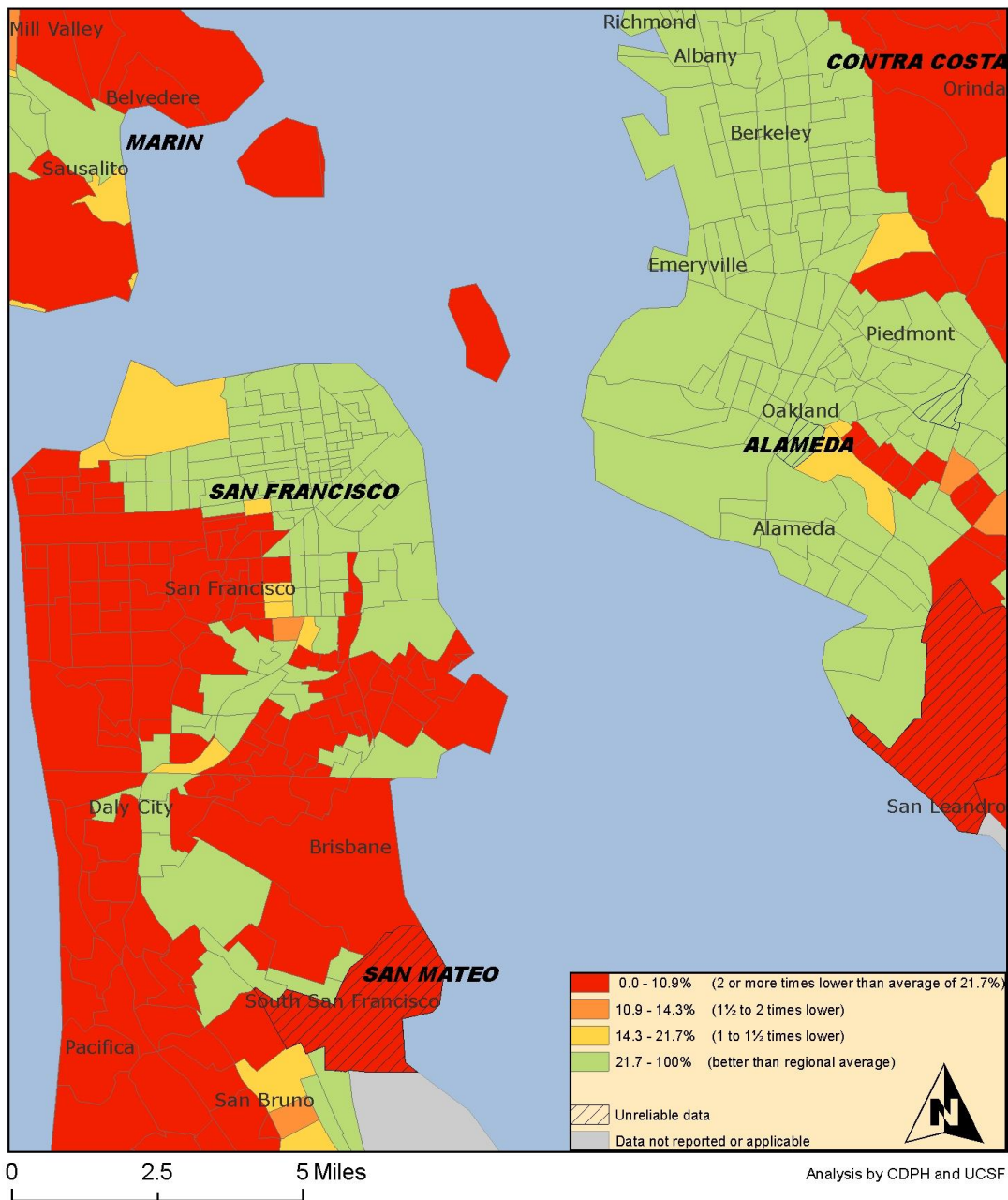
5. **Limitations**

Although transit data measure the distance of residents from transit stops, data do not take into account the frequency or destination of transit. Transit stops and service are subject to change, so data used in this analysis may not reflect recent changes. Transit stops are classified as local/regional based on transit agency (and not on individual routes). Census blocks are designated as inside or outside of transit buffers based on block centroids, which can result in some misclassification of population within buffer areas.

6. **Projects using this indicator**

Framework for Measuring Sustainable Regional Development for the Twin Cities Region, by University of Minnesota's Center for Transportation Studies and Center for Urban and Regional Affairs (http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=1886

Percent of Population Residing within ½ Mile of Regional Bus/Rail/Ferry and within ¼ Mile of Bus/Light Rail, by Census Tract, Central Bay Area Region, 2010

0.0 - 10.9%	(2 or more times lower than average of 21.7%)
10.9 - 14.3%	(1½ to 2 times lower)
14.3 - 21.7%	(1 to 1½ times lower)
21.7 - 100%	(better than regional average)
Unreliable data	
Data not reported or applicable	

0   2.5   5 Miles

Analysis by CDPH and UCSF

Source: U.S. Census Bureau: 2010 Decennial Census and Metropolitan Transportation Commission

Table 1. Percent of Population Residing within ½ Mile of Regional Bus/Rail/Ferry and within ¼ Mile of Bus/Light Rail, by County, Bay Area Region, 2010

County	Number	Population	Percent
Alameda	674,450	1,510,271	44.7
Contra Costa	122,640	1,049,025	11.7
Marin	46,294	252.409	18.3
Napa	0	136,484	0.0
San Francisco	373,816	805,235	46.4
San Mateo	154,899	718,451	21.6
Santa Clara	85,647	1,781,642	4.8
Solano	6,982	413,344	1.7
Sonoma	89,806	483,878	18.6
Bay Area Region	1,554,534	7,150,739	21.7

Table 2. Percent of Population Residing within ½ Mile of Regional Bus/Rail/Ferry and within ¼ Mile of Bus/Light Rail, by City/Town, Napa County, 2010

City/Town	Number	Population	Percent
American Canyon	0	19,454	0.0
Angwin	0	3,051	0.0
Calistoga	0	5,155	0.0
Deer Park	0	1,267	0.0
Moskowite Corner	0	211	0.0
Napa	0	76,915	0.0
Oakville	0	71	0.0
Rutherford	0	164	0.0
Silverado Resort	0	1,095	0.0
St. Helena	0	5,814	0.0
Yountville	0	2,933	0.0
Napa County	0	136,484	0.0
Bay Area Region	1,554,534	7,150,739	21.7

Data Source: Metropolitan Transportation Commission (2011), U.S. Census (2010)

Table 3. Percent of Population Residing within ½ Mile of Regional Bus/Rail/Ferry and within ¼ Mile of Bus/Light Rail, African-Americans and Whites, By City/Town, Alameda and San Francisco Counties, 2010

City/Town	African-American			White		
	N	Pop	Percent	N	Pop	Percent
Alameda	3365	4516	74.5	24,038	33,468	71.8
Albany	558	621	89.9	7571	9136	82.9
Ashland	3493	4085	85.5	2524	3413	74.0
Berkeley	10,622	10,896	97.5	55,702	61,539	90.5
Castro Valley	2708	4064	66.6	14,971	30,398	49.2
Cherryland	259	1585	16.3	348	3071	11.3
Dublin	145	4214	3.4	526	20,380	2.6
Emeryville	1716	1733	99.0	3832	4057	94.4
Fairview	259	2047	12.7	239	3618	6.6
Fremont	1659	6743	24.6	9688	56,766	17.1
Hayward	5306	16,297	32.6	8038	27,178	29.6
Livermore	140	1562	9.0	2271	52,397	4.3
Newark	1044	1908	54.7	6495	11,726	55.4
Oakland	68,689	106,637	64.4	64,014	101,308	63.2
Piedmont	87	136	64.0	5203	7632	68.2
Pleasanton	44	1116	3.9	1515	42,738	3.5
San Leandro	4129	10,052	41.1	11,300	23,006	49.1
San Lorenzo	850	1062	80.0	5114	7592	67.4
Union City	1654	4194	39.4	3660	10,009	36.6
San Francisco	20,775	46,781	44.4	172,082	337,451	51.0

Data Sources: Metropolitan Transportation Commission (2011) and the U.S. Census Bureau (2010, acquired from CA Dept. of Finance)

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